WHAT IS CLAIMED IS:

1. A method of sealing separator material around an electrode, comprising:

a) providing an electrode for an electrolytic capacitor cell;

b) forming a hollow vessel of separator material sized to substantially surround the exterior surfaces of said electrode;

c) placing said electrode within said hollow vessel and, optionally,

d) adhering a portion of the separator material to the electrode; and

e) sealing the pouch of separator material around the electrode so that only a electrical conductor coupled to said electrode protrudes from said pouch of separator material.

2. A method of claim 1, wherein the separator material comprises one or more layers of Kraft paper.

3. A method of claim 1, wherein the pouch of separator material comprises one or more layers of dielectric polymer film.

4. A method of claim 3, wherein the dielectric polymer film comprises polyethyelene, polypropylene, or polytetrafluoroethylene.

5. A method of claim 1, wherein the step of optionally adhering the pouch of separator material to the electrode assembly comprises stitching, adhesive bonding, taping, solvent welding, or ultrasonic welding.

6. A method of claim 1, wherein the pouch of separator material is formed by pressure forming, thermoforming, or solvent casting.

7. A method of claim 1, wherein the electrode comprises a pressed, sintered and formed, powdered metal anode.

8. A method of claim 7, wherein the electrode comprises tantalum.

9. A preformed separator and electrode combination for use in a capacitor cell, comprising:

a) one or more electrodes;

b) one or more tabs connected to the one or more electrodes; and

c) a pouch of separator material enclosing the electrode assembly;

wherein the one or more electrode tabs projects from the pouch of separator material.

10. A preformed separator and electrode combination of claim 9, wherein the one or more electrodes comprise one or more cathodes or anodes.

11. A preformed separator and electrode combination of claim 9, wherein the pouch of separator material comprises one or more layers of Kraft paper.

12. A preformed separator and electrode combination of claim 9, wherein

the pouch of separator material comprises one or more layers of dielectric polymer.

13. A preformed separator and electrode combination of claim 12 wherein the pouch of separator material comprises polyethyelene, polypropylene, or polytetrafluoroethylene.

14. A preformed separator and electrode combination of claim 9, further comprising an adhesive connecting the pouch of separator material and the electrode assembly.

15. A preformed separator electrode combination of claim 9, wherein the electrodes are configured as a flat electrolytic capacitor cell.

16. A preformed separator electrode combination of claim 9, wherein the electrodes are configured for use in a coiled capacitor cell.

17. A substantially flat electrode assembly suitable for use in a capacitor cell, comprising:

(a) at least one flat cathode layer having no holes for registration disposed therethrough, the cathode layer being formed of cathode foil and having a first perimeter of a first overall length, the cathode layer having at least a first tab projecting from the first perimeter at a first predetermined perimeter location;

(b) at least one anode member devoid of registration or alignment apertures disposed therethrough, the at least one anode member; and

(c) at least one separator envelope comprising upper and lower surfaces formed of separator material, the upper and lower surfaces of the separator envelope substantially surrounding the at least one anode member; wherein at least one surface of separator material is disposed between the at least one cathode layer and the at least one anode member.

18. A flat electrode assembly of claim 17, wherein the cathode layer is formed from aluminum cathode foil.

19. A flat electrode assembly of claim 17, wherein the at least one anode member comprises a pressed, sintered and formed, powdered tantalum metal slug.

20. A flat electrode assembly of claim 17, wherein each anode layer has a specific capacitance selected from the group consisting of at least about 0.3 microfarads/cm^2, at least about 0.5 microfarads/cm^2, at least about 0.8 microfarads/cm^2, at least about 1 microfarads/cm^2.

21. A flat electrode assembly of claim 17, wherein said at least one anode member has a thickness of between about 0.5 mm to about 4.0 mm.

22. A flat electrode assembly of claim 17, wherein the cathode layer is formed from a highly etched cathode foil.

23. A flat electrode assembly of claim 17, wherein the cathode layer is formed from a cathodic layer having a specific capacitance selected from the group consisting of at least about 100 microfarads/cm^2, at least about 200 microfarads/cm^2, at least about 250 microfarads/cm^2, and at least about 300 microfarads/cm^2.

24. A flat electrode assembly of claim 17, wherein the cathode layer is formed from aluminum foil having a thickness selected from the group consisting of from about 10 micrometers to about 200 micrometers, from about 15 micrometers to about 150 micrometers, from about 20 micrometers to about 100 micrometers, from about 25 micrometers to about 75 micrometers, and about 30 micrometers.

25. A flat electrode assembly of claim 17, wherein the anode sub-assembly comprises a plurality of non-notched anode layers and at least one notched anode layer.

26. A flat electrode assembly of claim 17, wherein the anode layers in the anode sub-assembly are cold-welded together.